Department of Mathematics and Statistics – Colloquium

Mathematics of Planet Earth: Multiscale Modeling of Urban Atmospheres in a Changing Climate

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Abstract

With a world population projection expected to exceed 9 billion people by 2050, the developing megapolitans provide a unique testbed to study the influence of large-scale urbanization on energy use and regional climates. We develop a high-performance computing (HPC) modeling framework to quantify direct hydroclimatic and energy impacts due to anticipated expansion of the built environment. Our scenario based computational modeling approach integrates natural, human and economic elements providing a useful tool for decision makers seeking sustainable solutions for rapidly expanding megapolitans.

Alex Mahalov is a Dean's Distinguished Professor in the School of Mathematical and Statistical Sciences in Arizona State University's College of Liberal Arts and Sciences, with a joint appointment in the School for Engineering of Matter, Transport, and Energy in the University's Ira A. Fulton School of Engineering. He works with Arizona State University's high-performance computing group on creating real-time, high-resolution environmental forecasts.

Wednesday, April 17 11:30am ANSC 118

Refreshments will be served in the Animal Science Lounge at 11:00 a.m.

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